



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,537	01/03/2002	Robert J. Reiter	SACHP0140US	7095

Armand P. Boisselle
Renner, Otto, Boisselle & Sklar, LLP
Nineteenth Floor
1621 Euclid Avenue
Cleveland, OH 44115

EXAMINER

PHASGE, ARUN S

ART UNIT	PAPER NUMBER
----------	--------------

1753

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/038,537

Applicant(s)

REITER ET AL.

Examiner

Arun S. Phasge

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-17, 19-25, 27-31 and 33-37 is/are rejected.
- 7) ☒ Claim(s) 8, 18, 26 and 32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11, 22-27 and 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated 5,968,338 by Hulme et al. (Hulme), U.S. Patent 5,968,338.

Hulme discloses the claimed method for the improving the purity of an aqueous onium hydroxide, such as those claimed (cols. 4-6), comprising providing the same electrochemical cell having at least four compartment (see figure 5), charging the onium to the feed compartment formed between the first bipolar and first cation membrane (see cols. 13-14), wherein the feed compartment is free of ion exchange material, passing a current through the cell and recovering a purified

Art Unit: 1753

onium solution from the recovery compartment formed by the first cation and the second bipolar membranes (see cols. 13-14). The reference further discloses the same types of impurity (col. 4, lines 14-25) and the same type of membrane (see col. 16, lines 23-54).

Therefore, since the patent discloses each and every limitation, the claims are anticipated.

Claims 1-11, 22-27 and 34-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Moulton et al. (Moulton), U.S. Patent 6,217,743 B1.

Moulton discloses the claimed method for the improving the purity of an aqueous onium hydroxide, such as those claimed (cols. 4-6), comprising providing the same electrochemical cell having at least four compartment (see figure 6), charging the onium to the feed compartment formed between the first bipolar and first cation membrane (see cols. 13-14), wherein the feed compartment is free of ion exchange material, passing a current through the cell and recovering a purified onium solution from the recovery compartment formed by the first cation and the second bipolar membranes (see cols. 13-14). The reference further discloses the same types of impurity (col. 6, lines 14-35) and the same type of membrane (see col. 15, lines 33-62).

Art Unit: 1753

Consequently, since the Moulton patent discloses each and every limitation, the claims are anticipated.

Both Moulton and Hulme disclose the aqueous quaternary ammonium hydroxide solution (see claims 1-34 of Hulme and claims 1-28 of the Moulton). The invention defined in a product-by-process claim is a product, not a process. *In re Bridgeford*, 149 U.S.P.Q. 55 C.C.P.A. (1966). It is the patentability of the product claimed and NOT of the recited process steps, which must be established. *In re Brown*, 173 U.S.P.Q. 685 C.C.P.A. (1972); *In re Wertheim*, 191 U.S.P.Q. 90 C.C.P.A. (1976).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 12-21, 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hulme as applied to claims above, and further in view of Shay et al. (Shay), U.S. Patent 5,833,832.

The reference does not disclose the claimed arrangement of membranes as claimed to obtain the quaternary ammonium hydroxide, while it does teach that one having ordinary skill in the art would find it readily apparent that additional numerous embodiments not specifically described in the figures exist within the scope of the invention (see col. 12, lines 8-15).

The Shay patent is cited to show an embodiment that encompasses the claimed electrochemical cell having first and second bipolar membrane having first and second cation membranes within the bipolar membrane (see figure 6).

Consequently, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Hulme patent with the teachings of the Shay patent, because the

Art Unit: 1753

Shay patent teaches that such use of a cell would have been an equivalent cell to form the onium hydroxides.

Claims 12-21 and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moulton as applied to claims above, and further in view of Shay applied as above.

The reference does not disclose the claimed arrangement of membranes as claimed to obtain the quaternary ammonium hydroxide, while it does teach that one having ordinary skill in the art would find it readily apparent that additional numerous embodiments not specifically described in the figures exist within the scope of the invention (see col. 11, lines 36-43).

The Shay patent is cited to show an embodiment that encompasses the claimed electrochemical cell having first and second bipolar membrane having first and second cation membranes within the bipolar membrane (see figure 6).

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Moulton patent with the teachings of the Shay patent, because the Shay patent teaches that such use of a cell would have been an equivalent cell to form the onium hydroxides.

Allowable Subject Matter

Claims 8, 18, 32 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: None of the prior art of record fairly disclose or render obvious the claimed method of regenerating the cation exchange material by eluting the material with an aqueous solution of an inorganic base. Conventionally acids elute cation exchange materials.

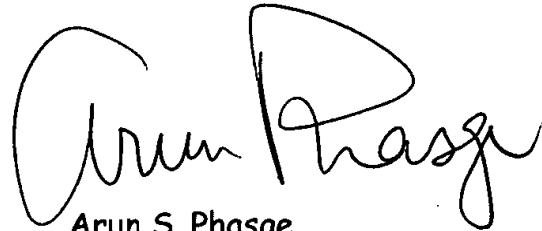
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (703) 308-2528. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Art Unit: 1753

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'Arun Phasge'. The signature is fluid and cursive, with the first name 'Arun' and last name 'Phasge' clearly distinguishable.

Arun S. Phasge
Primary Examiner
Art Unit 1753

asp